

CHAPTER I

INTRODUCTION

1.1 Background

The growth of the culinary industry, particularly in the bread and bakery product business segment, has shown consistent development in recent years. Bread products such as croissants, pastries, and cakes are increasingly popular among consumers and are consumed not only as complementary food items. To meet customer demand while maintaining the quality of products produced by bakery businesses, bakery business owners must learn to manage their business operational activities more effectively.

In bakery business operations, inventory management is one of the aspects that plays a crucial role. Inventory is directly related to the availability of products sold every day. If inventory management is not carried out properly, problems such as excess or shortage of stock can occur, which can result in unmet customer demand or excess stock that can cause losses. Therefore, systematic and measurable stock control is a fundamental need for every bakery business operator. Bakery products can be categorized as perishable goods, meaning they have a limited shelf life. Products that are not sold within a certain period will undergo changes in taste, texture, and suitability. Therefore, managing bakery product stock carries a higher risk than managing products with longer storage durability. Unsold products will become waste if not managed properly. As a result, the business will lose money [1].

In reality, small and medium enterprises still frequently manage product stock manually, including simple stock recording using notebooks or Microsoft Excel. This method has several weaknesses, including the possibility of recording errors, delays in updating data, and difficulty in conducting thorough stock checks. Furthermore, without an organized system, the product release process often ignores the proper priority sequence, causing products that should be sold first to be left behind [2].

This problem also affects the quality of service received by customers. When stock data is inaccurate, there is a risk that customers will receive products that do not meet their expectations or even products with substandard quality. In the long run, this condition can erode customer trust in the business as a whole.

To address the inventory management problems for products with limited shelf life, a method that specifically considers the expiration date as a reference in determining product release priority is needed. One relevant method in this context is First Expired First Out (FEFO), a stock management approach that prioritizes product release based on the nearest expiration date. With this principle, the risk of products exceeding their consumption suitability limit can be directly suppressed [3][4].

For food products, the FEFO method is considered more suitable than the FIFO method. This is due to the fact that products that enter earlier do not always have earlier expiration dates. Inventory management with FEFO is more appropriate because it is based on expiration dates rather than the order of product arrival. By making the expiration date not the order of arrival the basis for determining priority, inventory management becomes more precisely targeted in maintaining product quality while suppressing potential losses from wasted products.

Various studies have proven that the implementation of the FEFO method in inventory systems can significantly drive improvements in stock management efficiency. Systems that apply this method can improve inventory data accuracy and reduce the number of products wasted due to expiration. Additionally, FEFO systems can assist in decision-making [5][6].

Slay Bakehome bakery produces many types of bread every day. However, in its operations, inventory management is still conducted semi-manually and is not yet supported by a fully integrated system. Poor stock recording makes it difficult to monitor inventory quantities accurately, especially in situations where the number of products produced is quite large and varied.

Furthermore, the product release process still does not systematically consider the sequence based on expiration dates. This can cause products with shorter shelf lives to not be sold as planned. As a result, these products may lose their quality or even become unfit for consumption. This condition will inevitably cause the company to lose money and reduce operational efficiency.

The limitation in preparing inventory reports is an additional problem. The report preparation process becomes slower and less accurate without an integrated system. This makes evaluation and stock management decision-making more difficult for management.

Considering these various problems, a technological solution is needed that can optimize stock management while taking into account the characteristics of perishable products. The FEFO method is expected to solve problems in a web-based information system. In addition to facilitating product release management based on expiration dates, this system facilitates recording, monitoring, and reporting inventory data. It is expected that this system will make inventory management at Slay Bakehome Store more organized and efficient. Furthermore, the risk of losses due to expired products can be minimized, and product quality can be maintained. Based on this, this research carries the title "Perishable Goods Management Using FEFO Method in Bread Inventory System at Slay Bakehome Bakery Shop".

1.2 Problem Formulation

Based on the background description above, the problem formulations in this research are as follows:

1. How to design and develop a website-based sales system at Slay Bakehome?
2. How to implement the First Expired First Out (FEFO) method in a web-based sales system to support bakery product management at Slay Bakehome?
3. How to evaluate user response and satisfaction levels toward the developed system?

1.3 Research Objectives

This research aims to create a Perishable Goods Management Using FEFO Method in Bread Inventory System at Slay Bakehome Store.

1.4 Research Benefits

Based on the existing research objectives, the results of this research are expected to provide the following benefits:

1. Theoretical Benefits

This research is expected to provide scientific contributions in the field of Informatics through the implementation of the First Expired First Out (FEFO) method in the development of a web-based sales information system. This study can serve as an academic reference regarding the design of systems capable of managing stock based on product expiration dates, as well as presenting real-time information to support decision-making. Furthermore, this research contributes to the existing body of knowledge by demonstrating how the FEFO algorithm can be integrated into a comprehensive sales information system specifically tailored

for bakery businesses with perishable product characteristics. The findings of this study are also expected to enrich the literature on inventory management methods for short shelf-life products, providing a foundation for further academic exploration in the intersection of information technology and food industry operations.

2. Practical Benefits

Practically, this research is expected to help Slay Bakehome in improving the effectiveness of stock management and bakery product sales processes. The web-based sales information system implementing FEFO enables more structured, accurate, and efficient stock management, while supporting management in making decisions related to production planning and data-driven sales strategies. Through the automated stock prioritization mechanism based on expiration dates, the system can significantly reduce the risk of financial losses caused by unsold expired products. Additionally, the system provides real-time stock visibility and comprehensive sales reporting capabilities, allowing the store management to monitor daily operations more effectively. The system also streamlines the transaction recording process, eliminating manual errors that commonly occur in conventional sales documentation, thereby improving overall operational productivity and customer service quality at the store.

In summary, the combination of theoretical and practical benefits outlined above underscores the significance of this research in bridging the gap between academic knowledge and real-world business application. The development of a web-based sales information system with FEFO implementation at Slay Bakehome not only addresses the specific operational challenges faced by the store but also establishes a replicable model that can be adapted by other bakery businesses and food retail enterprises experiencing similar inventory management challenges with perishable products.